

CORROSION RESISTANT MEMBER

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Inventor: KOSHIDA MICHIIKO
Applicant: KYOCERA CORP
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Abstract of JP11279761

PROBLEM TO BE SOLVED: To obtain the corrosion resistant member of long term reliability achieving excellent corrosion resistance by covering a boron carbide film, in which a density is higher than a specified value and a surface roughness is less than a specified value, on a surface of a substrate so as not to generate a particle.

SOLUTION: This corrosion resistant member is made so that a surface of a substrate is covered with a boron carbide film having a density of $\geq 2.40 \text{ g/cm}^3$ and a surface roughness Ra of $\leq 0.6 \mu\text{m}$. The content of at least one of elements among boron, aluminum, iron in the boron carbide film is totally $\leq 3,100 \text{ ppm}$ (including 0). The corrosion resistant member, on the surface of which the boron carbide film of this constitution is covered is made plasmatic, under a fluorine group, a chlorine group, a halogen group corrosion gas, and by introducing a micro wave/high frequency voltage into the gas atmosphere, and excellent corrosion resistance can be attained under such plasma. Further, the substrate is constituted of a ceramic sintered body of boron carbide sintered body, AlN, Al₂O₃, Si₃N₄, SiC, etc., cermet and graphite.

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